1. PURPOSE. To provide guidance to Navy and Marine Corps Commanding Officers and Airfield Management in developing training programs for safe ground vehicle operations and pedestrian control on the airfield. Not all items addressed in this document will be applicable at every airfield. The Naval Safety Center recommends that each item be evaluated in terms of how it may apply to the size, complexity and scope of operation of the airfield.

2. BACKGROUND. Every year there are incidents involving aircraft and ground vehicles at airfields that could lead to property damage and/or injury to personnel, which could be fatal. Many of these events result from lack of and/or inadequate vehicle operator training. Airfield Vehicle Operators Instructions and Courses promote the safety of the airfield by helping identify authorized areas of vehicle operation, outlining vehicle identification methods, addressing vehicle and operator requirements, and coordinating construction, maintenance and emergency activities.

3. APPLICABILITY. The overall responsibility for the operation of vehicles on the airfield rests with the Commanding Officer. The Commanding Officer is also responsible for compliance with Federal Aviation Administration (FAA), NATOPS, and applicable Instructions and Directives. Adherence to the provisions contained in this guidance document may materially assist the Commanding Officer in complying with these requirements.

a. Commanding Officers, Airfield Managers, and Airfield Vehicle Operator Course (AVOC) Course Managers, should establish procedures and policies concerning vehicle access and vehicle operation on the airfield. These procedures and policies should address such matters as access, vehicle operations, and enforcement.

Note: At airfields where Air Traffic Control (ATC) is not the AVOIC Course Manager, ATC shall have oversight into course curriculum and testing to ensure compliance with FAA regulations.

b. Each bidding document (construction plans and/or specifications) for development work on the airfield should incorporate a section on ground vehicle operations on the airfield during construction activity.

4. RELATED READING MATERIAL. You will find additional information in the following publications:

a) OPNAVINST 3710.7, NATOPS General Flight and Operating Instructions

b) NAVAIR 00-80T-114, NATOPS Air Traffic Control Manual

c) NAVAIR 51-50AAA-2, General Requirements for Shorebased Airfield Marking and Lighting

d) NAVFAC P 80.3, Airfield Safety Clearances

e) FAA AC 120/5210-20, Ground Vehicle Operations on Airports

f) FAA AC 150/5340-1H, Standards for Airport Marking

g) FAA AC 150/5340-1H Change 1, Standards for Airport Marking

5. VEHICLE OPERATOR REQUIREMENTS. Vehicle operators

on airfields face conditions that are not normally encountered during highway driving. Therefore, personnel who have vehicular access to the airfield and a need to be there must have an appropriate level of knowledge of airfield rules and regulations. Any person expected to operate on the movement area should have a functional knowledge of the English language.

6. TRAINING. A sample AVOC curriculum for training personnel can be found under Training. The Airfield Manager or responsible authority shall retain records of the training and licenses. Vehicle Operators requiring access to the Aircraft Movement Area (AMA) require in-depth training to fully understand airports, signage, markings, lightings, phraseology, and safety requirements. Vehicle Operators requiring access only on Non-Movement Areas (NMA) require basic knowledge; factors such as speeds on ramps/TARMACS, emergencies, vehicle movement around aircraft, and restrictions to proceed onto the AMA.

Initial training is the training provided to personnel that enables that person to demonstrate the ability to operate a vehicle safely and in accordance with established procedures. Recurrent training is the training provided to personnel annually after their initial training, to enable that person to maintain a satisfactory level of proficiency. Initial training should include an LQS/T&R to ensure in-depth knowledge of airfields and their operations. When an LQS/T&R is used, recurrent training need only ensure retention of previously learned information and passing of a written test (including diagram). If an LQS/T&R is not used for initial training, then annual training must include all knowledge factors and criteria as the initial qualification.

AVOC Course Managers shall provide a means of testing trainees on the information presented. The written test should include labeling of a blank airfield diagram. In addition to standard question and answer classroom testing methods, the AVOC Course Manager should have potential ground vehicle operators demonstrate, via a practical exam, their proficiency in operating a vehicle on the airfield before authorizing driving privileges to the Aircraft Movement Area. This may be accomplished via a LQS/T&R.

7. VEHICLES ON AIRFIELDS. Airfield managers and AVOIC Course Managers should keep vehicular and pedestrian activity on the airfield to a minimum. Vehicles on the airfield should be limited to those vehicles necessary to support flight operations, emergencies and maintenance. Vehicles on the movement areas should be limited to those necessary for the inspection and maintenance of the movement areas, emergency vehicles responding to an aircraft emergency or as directed by ATC. Vehicles should use perimeter or public roads in lieu of crossing movement areas whenever possible. Where vehicular traffic on the airfield movement areas cannot be avoided, it should be carefully controlled.

When necessary, runway crossings should occur at the departure end of the runway rather than the approach or midpoint. In the even of a runway incursion, an aircraft would have more time

and runway length to react if the vehicle incursion is at the end of the runway. The aircraft may be able to come to a stop before striking the vehicle or it may be able to abort the landing.

8. VEHICLE REQUIREMENTS. Some items to consider for airfield managers when establishing vehicle requirements are:

a. Marking and lighting of vehicles.

b. Minimum equipment requirements.

c. Inclusion in all vehicles of an airfield diagram, light gun signal placard and airfield sign/marking information.

d. Vehicle condition requirements and inspection.

9. VEHICLE OPERATIONS. The rules and regulations pertaining to vehicle operations should provide adequate procedures for the safe and orderly operation of vehicles on the airfield. In developing such procedures, airfield managers and AVOIC Course Managers should consider:

a. Requirements that vehicles operating on the Aircraft Movement Area be radio equipped or escorted by a radio-equipped vehicle.

b. Specific procedural requirements for vehicle operations at OLF/ALF's without operating control towers.

c. Advance notice/approval for nonstandard operations on the airfield.

d. Speed Limits

e. Prohibitions on:

(1) Passing other vehicles and taxiing aircraft.

(2) Leaving a vehicle unattended and running.

(3) Driving too close to aircraft, both taxiing and parked.

(4) Operating on the AMA without constant surveillance of the radio.

f. Requirements stipulating when vehicle lights must be operated.

g. Requirements for the use of dedicated vehicle lanes and perimeter roads whenever possible.

h. Locations where vehicles may and may not park.

i. Rules for right-of-way (e.g. for aircraft, emergency vehicles, other vehicles).

j. Procedures for inoperative radios while on a movement area.

k. Requirements to report all accidents involving ground vehicles on the airfield.

l. FOD procedures.

m. BASH Awareness and procedures for reporting BASH activities.

10. EMERGENCY OPERATIONS AND NON-ROUTINE OPERATIONS. A number of non-routine operations occur on the airfield. Such non-routine activities include airfield construction, airshows, aircraft static displays, VIP arrival/departures, photo shoots and a host of other activities. In addition to security requirements, airfield managers should recognize and prepare for

the unique challenges that arise during non-routine operations as they relate to vehicle operations.

Airfield Managers should review non-routine operations that involve ground vehicles and develop vehicle operation procedures to accommodate these special operations. Planning meetings associated with such activities offers an opportunity to review driving rules and regulations, communications and procedures, and air traffic control procedures as well as other important operational issues.

These meetings should pay special attention to the following activities:

a. Airfield Construction. Airfield Manager should develop procedures for licensing of construction vehicle operators. Licensing requirements need to be included in the contract for the construction.

b. Emergency Response/Mutual Aid. Any mutual aid agreement between the local emergency service providers and the airfield should specify vehicle operations, whether it is licensing or requiring escorts onto the airfield.

c. Snow and Ice Removal / Mowers. Airfield Management that uses contractors for snow/ice removal and grass mowing should coordinate with the ROICC/G-4 offices to ensure contracts include vehicle operation procedures, including training requirements, consequences of non-compliance, and vehicle communications requirements.

d. Low-Visibility Operations. Additional consideration should be given to vehicle operations during low visibility. Poor weather conditions (snow, fog, rain, etc.) may obscure visual cues, roadway markings and airport signs.

11. SITUATIONAL AWARENESS. There are a number of factors that hamper vehicle operator situational awareness. Situational awareness declines as a driver's attention is drawn into the vehicle or is focused on any one thing to the exclusion of everything else. Other such factors include vague or incomplete communications or a vehicle operator's personal conflicts, which may involve fatigue and stress. Running behind schedule or being over-tasked also contributes to a reduction in situational awareness.

There are ways to enhance situational awareness. As part of an AVOC training program, AVOC Course Managers may concentrate on having vehicle operators visually scan fixed and moving objects that may be converging into the vehicle's path. Including videos of operations from the control tower and cockpit point of views will also show vehicle operators the pilot's and controllers views of the airfield and complexity of operations. Additionally, Air Traffic Control shall ensure the use of clear and concise communications by vehicle operators and controllers.

12. ENFORCEMENT AND CONTROL. Commanding Officers shall establish procedures for enforcing the consequences of non-compliance, including penalties for violations. Violation procedures may include:

a. Suspensions, to include retraining.

b. Revocation of license, depending on number of incidents and/or severity. If a vehicle operator's first violation is of such severity that it significantly impacted personnel and equipment, license may be revoked at first offense.

c. Loss of base driving points for airfield violations.